97TH CONGRESS } HOUSE OF REPRESENTATIVES { REPT. 97-758
2d Session } { Part 1

COMMEMORATION OF THE INTERNATIONAL GEOPHYSICAL YEAR

AUGUST 17, 1982.—Ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany H. Res. 514, which on June 23, 1982, was referred jointly to the Committee on Post Office and Civil Service and the Committee on Scienec and Technology]

The Committee on Science and Technology, to whom was referred the resolution (H. Res. 514) to commemorate July 1, 1982 as the twenty-fifth anniversary of the International Geophysical Year and to reaffirm the commitment of the House of Representatives to international cooperation in the sciences having considered the same, reports favorably thereon without amendment and recommends that the resolution do pass.

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I. PURPOSE OF THE RESOLUTION

Recognizing the importance of the International Geophysical Year (IGY) to the enhancement of international scientific cooperation, the resolution calls for commemoration of the twenty-fifth anniversary of the beginning of IGY. The resolution further calls for reaffirming the House of Representatives' commitment to continued efforts of international cooperation in all the sciences.

II. HISTORICAL NOTES: THE INTERNATIONAL GEOPHYSICAL YEAR AND THE INTERNATIONAL POLAR YEARS

The IGY and its predecessors were planned and coordinated by non-governmental international scientific organizations. For the IGY, the group was a Special Committee of the International Council of Scientific Unions, with membership from the principal individual scientific unions concerned with the earth's environment—the International Unions for Geodesy and Geophysics (IUGG), for Radio Science (URSI), for Astronomy (IAU), and for Physics (IAPAP). There was also very active liaison with and participation by intergovernmental organizations, notably the World Meteorological Organization and UNESCO. There were national committees in the Academy of Sciences in each of the 67 participating countries and obviously strong support from governments. The IGY was the largest and most comprehensive cooperative program in science ever undertaken.

The IGY opened up the Antarctic, initiated the Space Age and gave a lasting stimulus to cooperative efforts in all the scientific disciplines concerned. The planning and coordination of the antarctic research continued after the IGY under SCAR, a new scientific committee of ICSU; another ICSU committee, COSPAR, continued and tremendously expanded the IGY-initiated program in rockets and satellites. The successor programs in solid earth geophysics—more focused than for the IGY—were the Upper Mantle Project (1962–1970), the World Magnetic Survey (1962–1968), the Geodynamics Project (1970–1979), and now the new International Lithosphere Program (1980–1990).

In the solar-related geophysical sciences, the IGY (which by plan took place at the maximum of the 11-year sunspot cycle) was complemented by the International Years of the Quiet Sun (1964–65) so that a comparable data base could be obtained at sunspot minimum. Then in addition to various smaller coordinated programs, these disciplines, under a continuing ICSU committee, participated in the International Magnetospheric Study (1967–79), the Solar Maximum Year program (1979–81) and now the Middle Atmosphere Program (1982–1985).

In oceanography, new post-IGY committees of ICSU (SCOR) and UNESCO (IOC) have sponsored several oceanographic programs, programs, especially the International Decade of Oceanic Exploration and the Indian Ocean Expedition. The succeeding international programs in meteorology have made much use of the IGY experience; most notable is the Global Atmospheric Research Program.

A major legacy of the IGY is the continued international exchange of geophysical data through the World Data Centers under the auspices of the ICSU Panel on World Data Centers on behalf of all the unions and committees concerned with geophysical investigations.

Thus the IGY, itself the successor to the example-setting Polar Years, has stimulated programs and experiments in all fields of the earth's environment in space and in space science itself. It introduced new techniques in cooperation—the special or scientific committees of ICSU entrusted with action program planning, and coordination, as a supplement to the more disciplined and standards-oriented scientific unions. And the IGY introduced the mechanisms for orderly sharing of detailed observational data as a new dimension to the traditional sharing of scientific results through publication. The IGY also initiated the modern concept of a highly visible, focused program of limited duration which has been effectively emulated in many parts of geophysics, in other areas of science and indeed in many other areas of social or human activity.

The years 1982 and 1983 mark the anniversaries of major and pioneering programs of international cooperative activities in scientific studies of the earth and its environment—geophysics in the broadest sense.

The First International Polar Year took place 100 years ago in 1882–83. Eleven countries conducted expeditions, mostly in the Arctic and sub-Arctic, making measurements of the earth's magnetic field, the aurora, the weather. The most commonly cited result was the first delineation by Fritz of the auroral zone (the circum-polar band about 10° wide where aurora is visible on almost every clear night).

The Second Polar Year, 50 years ago in 1932–33, was planned as a follow-up to the first, using the new techniques, improved instruments and the better logistical possibilities. Again geomagnetic and auroral programs dominated but there were also expeditions to study for the first time the behavior of the ionosphere in high latitudes, using the newly devised radio probing techniques. The second IPY was planned and coordinated by the International Meteorological Organization.

Twenty-five years ago, in 1957–58, the International Geophysical Year was organized on a much larger scale. It involved 67 countries with world-wide (global) networks or surveys in 14 scientific disciplines in all aspects of the earth's environment. The IGY started the coordinated study of physical environment (and geographical exploration as well) of the south polar regions, and the direct exploration of the near-space environment in its Rocket and Satellite program. The IGY resulted in a huge, coordinated data base in geomagnetism, ionosphere, aurora, airglow, cosmic rays, together with the first virtually 24-hour watch on solar flares, sunspots, and other types of solar activity. There were coordinated programs in seismology, gravity, geodesy and oceanography which greatly increased our description and understanding of the earth and oceans. The data base of upper air meteorology and ozone was given a major assist through the IGY program. Most importantly, the IGY initiated the planned voluntary sharing of data through the system of World Data Centers.

The data record of the IGY and some results of early interpretations are reported in the 48-volume "Annals of the IGY" (Pergamon Press 1957–70). The first two volumes include a record of the organizational activities and retrospective articles on the two International Polar Years.

III. ACCOMPLISHMENTS OF THE IGY

The following is a list of the most notable accomplishments ascribed to the IGY in testimony before the Committee by Dr. Thomas Malone:

Initiation of the space age.—The first correct theory of rocket action put forward by K. E. Tsiolkovsky at the end of the 19th century had reached a stage of development that made possible the use of satellites for scientific investigations and it was as an integral part of the IGY. The first artificial Earth satellite was launched in 1957 by the USSR as a part of its program for the IGY. How well I remember the high hopes of those of us who met in Vienna, Austria, fourteen years ago this month at the United Nations Conference on the Exploration and Peaceful Use of Outerspace that this powerful new scientific tool could be directed exclusively to peaceful purposes. While that objective has been accomplished with remarkable success in meteorology, the corresponding meeting in Vienna this month cannot possibly realistically entertain the hope of those of us who gathered there fourteen years ago.

Spawning a series of international programs involving collaborative efforts among the scientists of more than five dozen countries which have illuminated natural phenomena in the atmosphere, the oceans, the earth, and outerspace. A partial list of these programs is provided in Attachment A, extracted from the records of the Geophysics Research Board of the National Research Council.

The IGY led directly to a series of programs that gained acceptance and deeper understanding of the notion of "continental drift" which had been advanced during the last century, but lay neglected and unappreciated because of the lack of observations. This concept has fundamentally changed our insight into the history of planet Earth.

The notion of a voluntary sharing of data which has undergirded scientific research and persisted successfully through the stresses and strains of the quarter century that has elapsed since IGY. Even as recently as within the past year, Soviet and U.S. scientists held productive conversations on the smooth operation of major data centers maintained in the Soviet Union and in the United States.

Strengthening of the international institutions which foster the communication and cooperation which are the very essence of science. The International Council of Scientific Unions has grown from a barely viable institution to one that now has promise of maintaining the unity of the scientific community which is going to be so crucial during the increasingly scientific technological era that lies ahead during the next century. The fact that the International Council is a nongovernmental organization facilitates communication among scientists during times of stress and strain among governments.

Underscoring the emerging concept that putting new scientific knowledge to good use was completely compatible with the exalted position traditionally held by activities intended to expand our storehouse of scientific knowledge. It has taken us nearly a half century to appreciate the comment of Dr. H. R. Kruyt in addressing the Second General Assembly of the International Council of Scientific Unions in Amsterdam that ". . . scientific research implies an ethical responsibility . . . knowledge is inevitably a thing that may lead to evil as to good." This statement takes on the character of an imperative as we wrestle with problems of ethics and morality in coping with the nuclear age spawned by scientific discoveries in the early part of this century.

Laying the ground work for the Antarctic Treaty which permitted an uninterrupted era of exploration of that vast continent and within the foreseeable future will present a new challenge to the interweaving of sciences and diplomacy.

IV. LEGISLATIVE HISTORY OF THE RESOLUTION

H. Res. 514 was introduced by Mr. Wirth for himself and Mr. Fuqua, Mr. Flippo, Mr. Scheuer, Mrs. Bouquard, Mr. Walgren, Mr. Glickman and Mr. Gore on June 23, 1982. The resolution was referred jointly to the Committees on Post Office and Civil Service and Science and Technology.

Testimony was heard before the Committee on Science and Technology on August 3, 1982. The following witnesses testified: Hon. Timothy E. Wirth; and Dr. Thomas F. Malone, Director, Holcomb Research Institute, Butler University, Indianapolis, Indiana.

On August 3, 1982, the Committee on Science and Technology met for the purpose of marking up the resolution. The resolution was unanimously agreed to and ordered reported favorably to the full House.

V. COST AND BUDGET DATA

The resolution does not provide for authorizing any new appropriations. Therefore, there are no cost or budget implications in connection with the passage of the resolution.

VI. EFFECT OF LEGISLATION ON INFLATION

In accordance with rule XI, clause 2(1)(4) of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

VII. CONGRESSIONAL BUDGET ACT INFORMATION

This resolution provides for no new authorization and consequently the provisions of section 308(a) of the Congressional Budget Act of 1974 are not applicable. No authorization for State or local financial assistance is included in the resolution.

VIII. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

Because the resolution provides for no authorization of funds an estimate by the Congressional Budget Office is not applicable.

IX. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

Pursuant to Clause 2(1)(3), Rule XI of the Rules of the House of Representatives, under the authority of Clause 2(b)(1) and Clause 3(f), Rule X, the Committee's oversight findings and conclusions are reflected in the recommendations found in the present resolution and report.

X. SUMMARY OF COMMITTEE ON GOVERNMENT OPERATIONS FINDINGS AND RECOMMENDATIONS

Pursuant to Clause 2(b)(2), Rule X, and Clause 2(l)(3), Rule XI of the Rules of the House of Representatives, no findings or recommendations have been submitted by the Committee on Government Operations for inclusion in this report.

XI. CHANGES IN EXISTING LAW MADE BY THE RESOLUTION, AS REPORTED

In compliance with clause 3 of Rule XIII of the Rules of the House of Representatives, no changes in existing law are made by the resolution, as reported.

XII. COMMITTEE RECOMMENDATIONS

A quorum being present, the Committee ordered favorably reported the resolution, H. Res. 514 by unanimous vote and recommends its approval.

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97TH CONGRESS } HOUSE OF REPRESENTATIVES { REPT. 97-
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CRITICAL MATERIALS ACT OF 1981

AUGUST 18, 1982.—Ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 4281]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 4281) to provide for the establishment of a Council on Critical Materials within the Executive Office of the President for the purpose of developing and coordinating national materials policy and program plans within the Federal Government having considered the same, report favorably thereon with amendments and recommend that the bill, as amended, do pass.

The amendments are as follows:

Strike out everything after the enacting clause and insert in lieu thereof the following:

SHORT TITLE

SECTION 1. This Act may be cited as the "Critical Materials Act of 1982".

FINDINGS AND PURPOSES

SEC. 2. (a) The Congress finds that—

(1) the availability of adequate supplies of strategic and critical industrial materials continues to be essential for national security, economic well-being, and industrial production;

(2) research, development, and technological innovation are important factors which contribute to and affect the availability and use of materials;

(3) there exists no single Federal entity with the authority and responsibility for establishing critical materials policy and for coordinating and implementing that policy; and

(4) the importance of materials to national policies requires an organizational means for the coordination, within and at a suitably high level of the Executive Office of the President, of existing policies within the Federal Government.

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(b) It is the purpose of this Act to establish a Council on Critical Materials under and reporting to the Executive Office of the President—

(1) to provide for necessary coordination of critical materials policies, including research and development, among the various agencies and departments of the Federal Government, and for the implementation of such policies;

(2) to bring to the attention of the President, the Congress, and the general public such materials issues and concerns, including research and development, as are deemed critical to the economic and strategic health of the Nation; and

(3) to insure adequate and continuing consultation with the private sector concerning critical materials, materials research and development, Federal materials policies, and related matters.

ESTABLISHMENT OF THE COUNCIL ON CRITICAL MATERIALS

SEC. 3. There is hereby established a Council on Critical Materials (hereinafter referred to as the "Council") under and reporting to the Executive Office of the President. The Council shall be composed of three members who shall be appointed by the President and who shall serve at the pleasure of the President. Members so appointed who are not already Senate confirmed officers of the Government shall be appointed by and with the advice and consent of the Senate. The President shall designate one of the members to serve as chairman. Each member shall be a person who, as a result of training, experience, and achievement, is qualified to carry out the duties and functions of the Council, with particular emphasis placed on fields relating to materials policy or materials science and engineering. In addition, at least one of the members shall have a background in and understanding of environmentally related issues.

RESPONSIBILITIES AND AUTHORITIES OF THE COUNCIL

SEC. 4. (a) It shall be the primary responsibility of the Council—

(1) to assist and advise the President in establishing a coherent national materials policy consistent with other Federal policies, and in carrying out activities necessary to implement such a policy;

(2) to coordinate Federal materials-related policies, programs, and research and development activities, including those related to critical materials;

(3) to review and appraise the various programs and activities of the Federal Government in accordance with the policy and directions given in the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1601), and to determine the extent to which such programs and activities are contributing to the achievement of such policy and directions;

(4) to formulate and recommend to the President national policies designed to improve conditions affecting the mineral and materials needs and resources of the Nation, and to meet the social, economic, and national security goals of the Nation;

(5) to advise the President of mineral and material trends, both domestic and foreign, the implications thereof to the United States and world economies and to national security, and the probable effects of such trends on domestic industries; and

(6) to make or furnish such studies, analyses, reports, and recommendations with respect to matters of materials-related policy and legislation as the President may request.

(b) In carrying out its responsibilities under this section the Council shall have the authority—

(1) to establish such special advisory panels as it considers necessary, with each such panel consisting of representatives of industry and other members of the private sector, not to exceed ten members, and being limited in scope of subject and duration; and

(2) to establish and convene such Federal interagency committees as it considers necessary in carrying out the intent of this Act.

(c) In seeking to achieve the goals of this and related Acts, the Council and other Federal departments and agencies with responsibilities or jurdiction related to materials or materials policy, including the National Security Council, the Council on Environmental Quality, the Office of Management and Budget,

and the Office of Science and Technology Policy, shall work collaboratively and in close cooperation.

RESEARCH AND DEVELOPMENT POLICY

SEC. 5. In addition to the responsibilities described in section 104, the Council shall have specific responsibility for overseeing and collaborating with appropriate agencies and departments of the Federal Government relative to Federal materials research and development policies and programs. Such policies and programs shall be consistent with the policies and goals described in the National Materials and Minerals Policy, Research and Development Act of 1980. In carrying out this responsibility the Council shall—

(1) review annually the materials research and development authorization requests and budgets of all Federal agencies and departments; and in this activity the Council shall, in cooperation with the Office of Science and Technology Policy, the Office of Management and Budget, and all other Federal office and agencies deemed appropriate, ensure close coordination of the goals and directions of such programs with the policies as determined by the Council; and

(2) assist the Office of Science and Technology Policy in the preparation of such long range materials assessments and reports as may be required by the National Materials and Minerals Policy, Research and Development Act of 1980, and assist other Federal entities in the preparation of analyses and reporting related to critical materials.

COMPENSATION OF MEMBERS AND REIMBURSEMENTS

SEC. 6. (a) Members of the Council who serve full time and the chairman of the Council, if not otherwise paid officers or employees of the Government, shall be paid at the rate of basic pay provided for level II of the Executive Schedule. The other members of the Council shall be paid at a rate per diem comparable to the rate of basic pay provided for level III of the Executive Schedule.

(b) The Council may accept reimbursement from any private nonprofit organization or from any department, agency, or instrumentality of the Federal Government, or from any State or local government, for reasonable travel expenses incurred by any member or employee of the Council in connection with such member's or employee's attendance at any conference, seminar, or similar meeting.

POSITION OF EXECUTIVE DIRECTOR

SEC. 7. (a) There shall be within the Council an Executive Director (hereinafter referred to as the "Director"), who shall be chief administrator of the Council. The Director shall be appointed by the Council and shall be paid, if not otherwise a paid officer or employee of the Government, at the rate of basic pay provided for level IV of the Executive Schedule.

(b) The Director is authorized—

(1) to employ such personnel as may be necessary for the Council to carry out its duties and functions under this Act, but not to exceed twelve compensated employees;

(2) to obtain the services of experts and consultants in accordance with the provisions of section 3109 of title 5, United States Code; and

(3) to develop rules and regulations necessary to carry out the purposes of this Act.

(c) Notwithstanding section 367(b) of the Revised Statutes (31 U.S.C. 665 (b)), the Council may utilize voluntary and uncompensated labor and services in carrying out its duties and functions.

RESPONSIBILITIES AND DUTIES OF THE DIRECTOR

SEC. 8. (a) In carrying out his functions the Director shall assist and advise the Council on policies and programs of the Federal Government affecting critical materials by—

(1) providing the professional and administrative staff and support for the Council;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, including research and development, which affect critical materials availability and needs;

(3) cataloging, as fully as possible, research and development activities of the Government, private industry, and public and private institutions;

(4) monitoring and evaluating the critical materials needs of basic industry and the Government, including the critical materials research and development needs of the private and public sectors;

(5) initiating Government and private studies and analyses, including those to be conducted by or under the auspices of the Council, designed to advance knowledge of critical materials issues and develop alternatives, including research and development, to resolve national critical materials problems;

(6) issuing a biennial report providing a domestic inventory of critical resources with projections on the prospective needs of government and industry for these resources, including a long range assessment, prepared in conjunction with the Office of Science and Technology Policy in accordance with the National Materials and Minerals Policy, Research and Development Act of 1980 and in conjunction with such other Government departments or agencies as may be considered necessary, of the prospective major critical materials problems which the United States is likely to confront in the immediate years ahead and providing advice as to how these problems may best be addressed, with the first such report being due on April 1, 1984; and

(7) recommending to the Congress such changes in the current policies, activities, and regulations of the Federal Government, and such legislation, as may be considered necessary to carry out the intent of this Act and the "National Materials and Minerals Policy, Research and Development Act of 1980".

(b) In exercising his responsibilities and duties under this Act, the Director—

(1) may consult with representatives of science, industry, labor, State and local governments, and other groups; and

(2) shall utilize to the fullest extent possible the services, facilities, and information (including statistical information) of public and private agencies, organizations, and individuals.

AUTHORITY

SEC. 9. The Council is authorized—

(1) to prescribe such rules and regulations as may be necessary for its operation;

(2) to enter into contracts and acquire property necessary for its operation to such extent or in such amounts as are provided for in appropriation Acts;

(3) to publish or arrange to publish critical materials information that it deems to be useful to the public and private industry to the extent that such publication is consistent with the national defense and economic interest;

(4) to request available information from private and public sources which it considers necessary in the discharge of its duties if—

(A) in the case of a request for information from a private source, the furnishing of such information will not create an undue burden or hardship on such sources; or

(B) in the case of a request for information from a public source, the furnishing of such information is permitted by law; and

(5) to exercise such authorities as may be necessary and incidental to carrying out its responsibilities and duties under this Act.

AUTHORIZATION OF APPROPRIATIONS

SEC. 10. There is hereby authorized to be appropriated to carry out the provisions of this Act a sum not to exceed $1,000,000 for the fiscal year ending on September 30, 1984, and such sums as may be necessary thereafter.

DEFINITION

SEC. 11. As used in this Act, the term "materials" has the meaning given it by section 2(b) of the National Materials and Minerals Policy, Research and Development Act of 1980.

Amend title of the bill to read:

A Bill to provide for a Council on Critical Materials, for development of a continuing and comprehensive national materials policy, and for programs necessary to carry out that policy.

Purpose of the Bill

The "Critical Materials Act of 1981", H.R. 4281, represents the next logical step in the policy and administration processes provided by Public Law 96–479, the "National Materials and Minerals Policy, Research and Development Act of 1980". H.R. 4281 establishes a Council on Critical Materials under and reporting to the Executive Office of the President for the purpose of developing and coordinating national materials policy and program plans within the Federal Government. Further, the Council will focus attention for the private and public sectors on materials-related issues considered critical to the Nation's economic and strategic well-being. Special attention is given to establishing materials research and development policies and programs consistent with the policies and goals of Public Law 96–479.

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I. Introduction and Issues

The availability of materials suitable for application is frequently a limiting factor in both the implementation of contemporary technologies and the development of more advanced technologies. For example, alloys of aluminum, chromium, cobalt, niobium, nickel, tantalum, and titanium are critical to the manufacture of modern jet engines. Only in the case of titanium is our import dependency less than 50 percent; for five others, more than 90 percent of our domestic consumption is met by imports—often from countries with divergent national interests to those of the United States. Similarly, high strength, corrosion resistant (hence, chromium-containing) materials are required for the production of natural gas from the hostile environment of deep, highly corrosive gas wells. In such other areas as power generation and trans-

mission, energy conversion and storage, transportation, chemical processing, biomaterials for surgical implants, national defense, and, in short, in virtually every major industrial activity the availability of suitable engineering materials is crucial.

As a consequence, much discussion has taken place in the Congress regarding means of treating the Nation's non-fuel materials needs through domestic and foreign strategies. Discussion has also focused on using research, development and technological innovation to resolve many of these materials-related problems, hence reducing our vulnerability to interruptions in supply of critical and strategic materials. There is considerable research and development activity throughout the Nation and the world in the processing and properties of metallic, ceramic, polymeric, electronic and other materials. This activity encompasses such applications including, as well as the above, lightweight, fuel-efficient automobiles; the storage of nuclear wastes and hazardous chemicals; first-wall fusion reactor materials; high-temperature gas turbines; and microelectronics to name just a few. In the U.S., the Federal Government spends an estimated $1 billion annually on such research with $4.0 billion being spent by the private sector.

Thus, there is good reason to believe that the resolution of our materials import vulnerability could be reduced with proper development, coordination and implementation of a national critical materials policy, including a suitable research and development strategy. Within this general framework, there are areas of particular national concern:

(1) DEFENSE

Our national defense and economic well-being depends strategically on more than twenty non-fuel minerals of which seven are imported at levels of 90 percent or more and the rest at levels of 50 percent or more of our annual needs. Included among the former are sources of manganese, cobalt, chromium, and the platinum-group metals of which the world's reserves lie largely in Southern Africa and the Soviet Union. Given the complex politics of importation, the Nation is particularly vulnerable in an economic and strategic sense to interruption in the supply of several of these elements. For instance, in the case of chromium, while there are potential metallurgical substitutes for chromium, there are no known elements which play the chemical role of chromium in corrosion resistant stainless steels, which are the backbone of our chemical processing industry, or in oxidation resistant alloys used in jet engines and high-temperature gas turbines.

(2) DOMESTIC PRODUCTION

Our domestic minerals processing and metals producing industries are no longer as competitive in the world marketplace. For example, U.S. ferroalloy production, on which steelmaking is dependent, has decreased from 85 percent of domestic consumption in the 1960's to about 50 percent in 1980. In this instance, the Nation is now importing materials which our domestic industry was once capable of supplying. Without a domestic ferroalloy processing capacity, the availability of raw materials in the world marketplace takes on a different character in terms of the health of a vigorous steelmaking industry. This is par-

ticularly true in a nation in which steel-intensive technologies (the automotive industry, tubulars for oil and gas production and distribution, steel applications in the production of alternate fuels, etc.) abound. There is widespread concern about the long-term vitality of the domestic metals producing industry in general, emphasized by the steel industry's movement away from metals production activities into other more diverse areas. Similar concerns exist regarding processing and production in the titanium, aluminum and copper industries. The materials processing and producing capabilities of the Nation should be among the issues treated in providing a national materials policy, with specific consideration given to research and development, tax incentives, regulation, and import controls.

(3) STOCKPILING

The bulk of the materials contained in the strategic stockpile was assembled more than twenty years ago. For 20 of the 61 families of materials included in the stockpile, the quantity available is at least 50 percent or more short of the goals established by the Federal Emergency Management Agency. Alternatives to stockpiling include, on the one hand, substitution, conservation, recycling, advanced technology related to high performance materials, and surface modification for corrosion or wear resistance; and, on the other hand, incentives such as exist in the Defense Production Act of 1950 (50 U.S.C. App. 2091 et. seq.). Obviously, further coordination at a comprehensive policy level would allow for more efficient and effect means of handling our present policies and programs regarding the stockpiling of critical materials.

(4) CORROSION

It has been estimated that about 4 percent of our GNP is lost annually due to metallic corrosion and that roughly 20 percent of this cost could be saved by making proper use of existing technology. In addition to the need for effective technology transfer in this area, we need to evaluate the impact of new technologies on our materials needs. For example, some metallic alloys produced by rapid solidification processing have unique mechanical, magnetic, electrical and chemical properties and may find application in areas ranging from chemical processing to national defense. The content of chromium required in alloys produced by rapid quenching to induce corrosion resistance is substantially lower than in alloys produced by traditional methods.

(5) MATERIALS CYCLE

In addition to the mining of raw materials and minerals processing and refining, other stages of the total materials cycle must be considered in the development of national materials policy. At a time when our vulnerability to interruption in the supply of chromium and other materials is clear, it is imprudent to allow unlimited export of recyclable stainless steel scrap, each ton of which contains roughly 400 pounds of chromium. This emphasizes the need for a national materials policy in which coordination between government and industry is continually exercised. Similarly, research on materials processing should be stimulated, particularly innovative processing techniques

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such as rapid quenching, and advanced semi-conductor crystal growth techniques that would result in major improvements in manufacturing rather than incremental development of existing technology. Our Nation's vanishing lead in micro-electronics to Japan is in part a consequence of contrasting policies of our governments and Japanese industry's willingness to adapt and implement new technologies.

Finally, the Nation's materials, energy and environmental concerns are not unrelated. The large increases in energy costs have made the production of most materials more expensive. By the same token, advanced energy technology such as coal conversion, production of natural gas from deep wells, breeder and fusion reactors, solar electric energy, hydrogen energy systems, and fuel cells are all materials limited. Development of new domestic sources of minerals, particularly within public lands, must be weighted against long-term, multiple use of such lands and the critical (or lack of critical) nature of the minerals involved. The need for careful attention to the long-term balance between the production of critical materials, energy consumption and a clean environment continues to be persistent. Development and integration of materials policy and policy related to the Nation's energy and environmental concerns requires coordination which goes beyond the factional interests of individual agencies or missions.

II. Purpose

During the closing days of the 96th Congress, Public Law 96–479, the "National Materials and Minerals Policy, Research and Development Act of 1980" was signed into law. Public Law 96–479 represented the first major statement on materials policy that had been developed in over three decades, and required the President to take a number of steps in addressing materials problems. These included among others the establishment of an organizational structure providing the following elements: policy analysis and decision determination within the Executive Office of the President; continuing long-range analysis of materials use to meet national security, economic, industrial and social needs, the adequacy and stability of materials supplies, and the industrial and economic implications of supply shortages or disruptions; continuing private sector consultation in Federal materials programs; and interagency coordination at the level of the President's Cabinet. In addition, the Act called for a balancing of environmental, energy and materials policies and defined several initiatives on the part of the Secretaries of Commerce, Defense and the Interior and the Director of the Office of Science and Technology Policy to consider the resolution of a variety of materials related problems.

It appears clear, as described in Section III of this report, that the current Administration's response to Public Law 96–479 does not address major concerns of the National Materials and Minerals Policy, Research and Development Act of 1980. In short, the Administration appears to place heavy emphasis on minerals and public lands policy and little or no emphasis on other materials concerns in the product or user end.

The purpose of H.R. 4281, the "Critical Materials Act of 1981", a supplement to Public Law 96–479, is to reemphasize policy directives of the original legislation and to focus further on organizational con-

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cerns. In particular, the bill establishes a Council on Critical Materials under and reporting to the Executive Office of the President. Policy directions are determined as much or more so by organizational placement as any other feature of a policy-making body. It is no accident that the Council on Natural Resources and Environment, headed by the Secretary of the Interior, placed primary emphasis on minerals, mining and related public land policies with almost no attention to basic materials processing, conservation, substitution, recycling or new materials development. Such imbalances in the focus of materials policy can be expected regardless of which agency has responsibility and/or authority. It was for this reason that Public Law 96–479 called for, among other things, "policy analysis and decision determination within the Executive Office of the President". Such a level of policy determination would transcend the normal interagency competitiveness and provide the necessary balance in materials policy considerations. The Committee intends that the Council should be part of the operations of the Executive Office of the President, but flexibility regarding the organizational location of the Council is provided by the bill. In event, the policy decision making shall remain at an executive level above any given individual Federal department or agency as specified in P.L. 96–479. It is not intended that the Council be restricted in any policy making role because of any possible identification with an individual Federal Department or agency.

The Council on Critical Materials, as proposed, would (1) provide for necessary coordination of critical materials policies, including research and development, among the various agencies and departments of the Federal Government, and for the implementation of such policies; (2) bring to the attention of the President, the Congress and the general public such materials issues and concerns, including research and development, as are deemed critical to the economic and strategic health of the Nation; (3) insure adequate and continuing consultation with the private sector concerning critical materials, materials research and development, Federal materials policies, and related matters. The Council on Critical Materials would oversee the multitude of Federal materials programs—in materials research alone, there are over 14 agencies and departments involved with over $1 billion in programs—and act as the Federal government's focal point to analyze and evaluate materials policy as it would concern our energy, environmental, minerals, defense and foreign policies, among others. It would also provide to those groups important information and data concerning materials needs, problems and projections. Moreover, H.R. 4281 would focus attention on coordination and implementation of research and development activities aimed at stimulating industrial innovation and productivity and at developing new materials, substitution, conservation and recycling technologies to reduce the demand on critical and strategic materials.

III. Analysis of the Administration's Response to Public Law 96–479: National Materials and Minerals Program Plan and Report to Congress

In response to Public Law 96–479, the President released his "National Materials and Minerals Program Plan and Report to Congress"

on April 5, 1982. The plan, which was transmitted almost six months after its due date focuses on four major policy elements:

(1) LAND AVAILABILITY

The plan proposes to open public lands to appropriate minerals exploration and development; in short, to determine the potential of the public lands with respect to minerals availability. Emphasis is placed on wilderness lands and withdrawal of other public lands in relation to minerals development and national needs given the "vast unknown and untapped mineral wealth" of the Nation. There is little evidence, however, to substantiate the existence of large amounts of critical or strategic minerals on public lands.

(2) MINERALS AND MATERIALS DATA COLLECTION

The plan emphasizes that minerals and materials information and analysis is critical in guiding policymaking affecting national defense, land use, taxation, trade, research and development, environmental protection and various aspects of both domestic and foreign policy. The proposed initiatives would strengthen the Department of the Interior's International Regional Resource Officer program as well as review domestic data collection but falls short of the requirements of P. L. 96–479 calling for long-term assessment of international minerals supplies.

(3) MATERIALS RESEARCH AND DEVELOPMENT

The plan states that the National Economic Recovery and Tax Act of 1981 provides sufficient tax incentives to stimulate private sector research and development. Thus, all government funded research and development activities, except for mission specific Department of Defense programs, are stated to concentrate on long-term, high-risk, high-potential payoff projects with the best chance of wide generic application to materials problems and increased productivity. In short, government assistance is considered appropriate only where market forces are incapable of achieving clearly defined national objectives. The interagency Committee on Materials (COMAT) is reaffirmed as the federal research and development coordinating body, while policy resolution of materials research and development questions will be provided through the Cabinet Council on Natural Resources and Environment. The latter is at odds with the specifications of P.L. 96–479 which suggests that policy analysis and decisionmaking be accomplished within the Executive Office of the President and materials research and development analysis be conducted by the Office of Science and Technology Policy.

(4) STRATEGIC AND CRITICAL MATERIALS STOCKPILE

The President's plan calls for a "major interdepartmental effort to improve the nation's preparedness for national mobilization" through the Emergency Mobilization Preparedness Board. Further emphasis is placed on Titles I and III of the Defense Production Act and on the Strategic and Critical Materials Stockpiling Act, the latter to include

a comprehensive review of current materials being stockpiled. Title III funding authorization was not treated.

While the President's plan has been widely cited as "the first major statement by any President in thirty years addressing the nation's mineral dependency problems", there is considerable concern as to whether the proposed plan represents the necessary framework for the coherent national materials and inerals policy as required by P.L. 96–479. Analysis of the Congressional Research Service (CRS) of the President's report made the following point:

> Several policy areas appear to have been given major attention in the President's report: mineral development on federal lands, deregulation, Cabinet Council policymaking and coordination, and Administration economic policy. Yet these policy areas were given relatively little attention in the guidelines offered by the Act: land policy, Section 3(7) and 5(e)(3); deregulation, Section 4(8); and Cabinet Council coordination, Section 5(a)(1)(D). Thus, the report may be seen to some extent as a vehicle for promoting these current Administration policy issues, rather than as a complete response to the requirements of the Act. This view may be supported by the number of areas of concern that were raised by the Act but essentially ignored in the report: scientific and technical engineering manpower needs, especially for research and development in critical materials areas; the need for long-range assessments of minerals and materials needs and requirements, preferably for 5–10–25 years; the need for increased mining and metallurgical research capabilities by the U.S. Bureau of Mines; the need for greater attention to resource recovery, recycling, and waste materials disposal; and the need for an early warning system for materials supply and availability problems.
>
> However, the largest gap between the Act and the report is unquestionably one not of omission but of commission: the Administration's insistence that "national materials policy will be coordinated through the Cabinet Council on Natural Resources and Environment" (page 7), rather than through the Executive Office of the President, as consistently specified in the Act. The question of the central focus for such policymaking within the Executive Branch is perhaps the key question at issue, and it seems clear that the Administration and the Congress continue to differ on this vital point.

In addition to those areas cited in the CRS analysis, the plan fails on a number of specific policy related issues:

(1) An emphasis on minerals and public land policy while ignoring other materials concerns in the final product or use cycle. This, it would appear, is a consequence, despite the Administration's disclaimer, of the fact that the Council on Natural Resources and Environment is operated essentially at a sub-Cabinet level through the Office of the Secretary of the Interior.

(2) The absence of specific proposals or programs on critical or strategic materials research and development, particularly programs

for substitution, recycling, conservation, and new materials development.

(3) No permanent organizational structure for coordination of materials and minerals policies or programs was presented as required by the law.

(4) No specific programs in the Department of Defense, Interior or Commerce were recommended as a result of their 18-month analysis.

IV. Summary of Testimony and Administration Position on the Bill

Testimony was heard on H.R. 4281 before a joint hearing of the Subcommittees on Science, Research and Technology, and Transportation, Aviation and Materials of the Committee on Science and Technology on April 20 and 22, 1982. H.R. 4281 proposes the establishment of a Council on Critical Materials in the Executive Office of the President to advise the President on materials matters and to coordinate Federal interagency programs. While the location of this advisory body within the Executive Office of the President was supported in all nongovernment testimony by a variety of representatives from industry and academia and has been consistenly recommended for over 30 years in preceding studies, the Administration opposed this approach in general and specifically the legislative approach of H.R. 4281. Although endorsing the need for effective materials and minerals policy coordination, the Administration felt that the Council required by this bill would bureaucratically impede materials and minerals policy coordination whereas the Cabinet Council, already in place, would assure that all interested departments and agencies were represented. The Administration would, therefore, prefer that policymaking reside with the Cabinet Council on Natural Resources and Environment which is chaired by the Secretary of the Interior. Other witnesses argued that the latter approach is considered inadequate in the sense that the Cabinet Council structure lacks the permanency crucial to maintaining continuity from one Administration to the next. Moreover, given the organization and political character of the Cabinet Councils, concern was expressed that the Council on Natural Resources and Environment would be unable to provide the objective analysis and decisionmaking required to treat the Nation's materials and minerals needs. Additionally, testimony expressed the concern that the revitalization of the Committee on Materials (COMAT), as proposed in the President's plan, would not be effective in providing the desired coordination of materials research and development activities on a Federal level. The need for central Executive Office coordination and policymaking is underscored by the Administration's late response to Public Law 96–479 and lack of implementation as required by the Act. Finally, consultative ties with the private sector are minimal or nonexistent. Industry does not know how the Council on Natural Resources and Environment functions or how materials and minerals issues of importance might be brought to its attention by industry.

V. Summary of the Bill

The importance of materials-related matters in national domestic and foreign policy requires an effective organizational means at the

level of the Executive Office of the President with the authority and responsibility for establishing, coordinating and implementing critical materials policy. Thus, the bill establishes a three-man Council on Critical Materials under and reporting to the Executive Office of the President as that organizational entity.

The Council has the responsibility (1) to assist and advise the President in establishing and implementing a coherent national materials policy consistent with other Federal policies; (2) coordinate Federal materials-related policies, programs and research and development activities; (3) review and appraise the programs and activities of the Federal Government in accordance with the policy and directions given in the National Materials and Minerals Policy, Research and Development Act of 1980 (Public Law 96–479); (4) formulate and recommend to the President national policies designed to improve conditions affecting the mineral and materials needs and resources of the Nation; (5) advise the President on domestic and foreign minerals and materials trends and their effects; and (6) provide for such studies, analysis, reports and recommendations with respect to questions of materials-related policy and legislation as the President may request.

The bill places special emphasis on the importance of materials research and development. The bill stipulates that the Council shall have specific responsibility for overseeing and collaborating with the appropriate agencies and departments of the Federal Government with respect to Federal materials research and development policies and programs. To this end, the Council will (1) annually review the materials research and development authorization requests and budgets of all Federal agencies and departments and, in cooperation with the Office of Science and Technology Policy (OSTP), the Office of Management and Budget, and other appropriate Federal agencies; and (2) assist OSTP with the preparation of long-range materials assessments and reports as required by law, and assist other Federal entities in the preparation of analysis and reports related to critical materials.

The Council, if apropriate, will appoint an Executive Director who will provide professional and administrative staff and support for the Council and to carry out the mandates of the Act, including a biennial report providing a domestic inventory of critical resources. The report will also provide an assessment of the prospective major critical materials problems which the Nation is likely to have, and advice as to their resolution.

VI. Sectional Analysis of the Bill

Sec. 1. Gives the short title, as amended, as the "Critical Materials Act of 1982."

Sec. 2. Provides findings and purposes of the Act, including the establishment of a Council on Critical Materials under the Executive Office of the President.

Sec. 3. This section establishes and defines the Council on Critical Materials: The Council consists of three members appointed by the President and confirmed by the Senate when appropriate. Each will have training, experience or background in materials policy and/or materials science and engineering.

Sec. 4. Defines the responsibilities and authorities of the Council.

Sec. 5. Places emphasis on materials research and development as oversight responsibility of the Council.

Sec. 6. Provides compensation of members of the Council.

Sec. 7. Provides for an Executive Director as chief administrator of the Council.

Sec. 8. Defines responsibilities and duties of the director.

Sec. 9. Defines further authorities of the Council.

Sec. 10. Authorizes up to $1,000,000 for the first year of operation.

Sec. 11. Defines the term "Materials."

VII. Analysis of the Bill and Committee Views

This Act, which may be cited as the Critical Materials Act of 1982, provides for the organization of a Council on Critical Materials under the Executive Office of the President for the purpose of establishing, coordinating, and implementing national critical materials policy. Particular emphasis is placed on research, development and technological innovation as a means of reducing the Nation's materials import vulnerability while at the same time recognizing the importance of integrating materials policy related to the Nation's energy, environmental and other concerns.

A. FINDINGS AND PURPOSES

Section 2(a) establishes that the availability of supplies of materials vital to national defense (strategic) and important to the Nation's industrial economy (critical) continue to be essential. Many materials and minerals may be appropriately placed in both categories. Research, development and technological innovation throughout the entire materials cycle (discovery, extraction, production, processing, use, recycling and disposal) represent opportunities to reduce our materials import vulnerability. There exists at present no single Federal entity responsible for establishing critical materials policy or for coordinating and implementing that policy. The Committee believes that the policymaking entity should be organized under and report to the Executive Office of the President in order to integrate such policy with that of environmental, energy, security or other pertinent national policy considerations. As noted in Section III of this report the Committee intends that the Council should be part of the operations of the Executive Office of the President, but flexibility regarding the organizational location of the Council is provided by the bill. In any event, the policy decision making shall remain at an executive level above any given individual Federal department or agency as specified in P.L. 96–479. The Committee does not intend that this Council be restricted in any policy making role because of any possible identification with an individual Federal department or agency. The Committee further does not intend that the activities of the Council be duplicative of any related activities now underway in the Executive branch. Rather such activities should be subsumed under the Council's responsibilities.

Section 2(b) provides for and the Committee agrees with the establishing of a Council on Critical Materials under the Executive Office

of the President (EOP). H.R. 4281 requires the establishment of a permanent Council on Critical Materials in order to transcend the normal interagency competitiveness and to provide for the necessary balance in materials policy decisionmaking. Section 2(b) specifies that the Council on Critical Materials will: (1) provide for necessary coordination of critical materials policies including research and development, among the various Federal agencies and departments and for the implementation of such policies; (2) bring to the attention of the President, the Congress and the general public such materials issues and concerns as are considered critical to the social, economic and strategic health of the Nation; and (3) insure adequate and continuing consultation with the private sector concerning materials, materials research and development, Federal materials policies and related matters.

B. ESTABLISHMENT OF THE COUNCIL ON CRITICAL MATERIALS

Section 3 specifies that the Council on Critical Materials, established under and reporting to the Executive Office of the President, shall be composed of three members, one of whom shall be designated chairman. The members shall be appointed by the President with the consent, as appropriate, of the Senate. It is the Committee's view that the members shall be duly qualified to carry out the purposes of the Council given their training, experience and achievement in fields relating to materials policy and or materials science and engineering. In addition, to provide greater balance with such policies as they concern environmental needs, the Committee directs that at least one member shall have a background and understanding in environmentally related matters. The Committee has reported language which gives the President the flexibility to appoint one or more members who might already be confirmed members of his Administration. In light of the possibility that more than one member may not have full time status, the Committee feels that the Executive Director should be a full time employee.

C. RESPONSIBILITIES AND AUTHORITIES OF THE COUNCIL

Section 4 describes the primary responsibilities of the Council, as follows:

(1) to assist and advise the President in establishing a coherent national materials policy consistent with other Federal policies, and in carrying out activities necessary to implement such a policy. It is the Committee's intent that, for example, policy related to the Nation's materials, energy and environmental needs should be considered and evaluated in integrated form. Likewise, given the complicated politics and questions of importation, materials policies should be duly considered in foreign policy and national security questions;

(2) to coordinate materials-related policies, programs, and research and development activities, including those related to critical materials, within the Federal Governemnt;

(3) to review and appraise the various programs and activities of the Federal Government in accordance with the policy and directions given the National Materials and Minerals Policy, Re-

search and Development Act of 1980 (Public Law 96–479), and to determine the extent to which such programs and activities contribute to the achievement of such policy and directions;

(4) to formulate and recommend to the President national policies designed to improve conditions affecting the mineral and materials needs and resources of the Nation, and to meet the social, economic and national security goals of the Nation. By social goals, it is the Committee's intent that the Nation's materials needs must be balanced with other national needs such as environment or energy. Such policies should consider, as well, measures for economic analysis and such financial, tax and regulatory incentives as may be necessary to stimulate industrial innovation and productivity in materials technologies but not to the detriment of environmental or energy needs;

(5) to advise the President of mineral and material trends, both domestic and foreign, of the implications to the economy of the United States and the world and to national security. The probable effects of such trends on domestic industries should also be considered. Given the Nation's import vulnerability—particularly with respect to critical and strategic materials such as chromium, cobalt, manganese, and the platinum-group metals—it is important that conditions in southern Africa, for example, where most of the world's reserves of materials are located, be carefully appraised; and

(6) to make or furnish such studies, analyses, reports and recommendations with respect to materials or materials-related policy and legislation as the President may request.

Section 4(b) authorizes the Council to establish such special advisory panels as it considers necessary in carrying out its responsibilties. Each such panel should consist of representatives from industry, academia, and other members of the private sector, not to exceed ten members, and is intended to be limited in scope and duration. The Committee feels strongly that such outside consultative ties be established in the conduct of the Council's business. In addition, the Committee feels strongly that non-profit, private interest groups have an adequate opportunity to participate in the overall formulation of such policy. Similarly, the Council shall establish and convene such Federal interagency committees as it considers necessary in carrying out the intent of this Act.

Section 4(c) calls attention to the need for collaboration and cooperation between the Council and other Federal departments and agencies with responsibilities or jurisdiction related to materials or materials policy. The latter may include among others the National Security Council, the Council on Environmental Quality, the Office of Management and Budget, and the Office of Science and Technology Policy.

D. RESEARCH AND DEVELOPMENT POLICY

In addition to the responsibilities described in Section 4, the Committee concurs that the Council shall have specific responsibility for overseeing and collaborating with appropriate agencies and departments of the Federal Government relative to Federal materials research and development policies and programs. In this context,

Section 5 again emphasizes the need that such policies and goals are described in the National Materials and Minerals Policy, Research and Development Act of 1980, including providing a balance between materials, environmental and energy policies. In carrying out this responsibility, the Council shall: (1) annually review the materials research and development authorization and budgets of all Federal agencies and departments. In addition, in this context, the Council shall, and the Committee agrees, in cooperation with the Office of Science and Technology Policy, the Office of Management and Budget, and other Federal offices and agencies as deemed appropriate, ensure close coordination of the goals and directions of such programs with the policies as determined by the Council. Such a review process would ascertain any duplication, deficiencies in programs, opportunities for industrial innovation, and others; and (2) assist OSTP in the preparation of such long-range materials assessments and reports as may be required by the National Materials and Minerals Policy, Research and Development Act of 1980, as well as providing assistance to other Federal entities in the preparation of analyses and reports related to critical materials.

E. COMPENSATION OF MEMBERS AND REIMBURSEMENTS

Section 6(a) stipulates that members of the Council shall serve full time if appropriate. Such members shall be paid at the rate of basic pay provided for level III of the Executive Schedule while the chairman shall be paid at the rate provided for level II. Reimbursement from any private nonprofit organization or from department, agency, or instrumentality of the Federal Government for reasonable travel expenses incurred by any member or employee of the Council in connection with such member's or employee's attendance at any conference, seminar or similar meeting is also provided for in Section 6(b).

F. POSITION OF THE EXECUTIVE DIRECTOR

This section deals with the appointment by the Council of an Executive Director, who shall be the chief administrator for the Council. The Director shall be paid at the rate of basic pay provided for level IV of the Executive Schedule and is given the authority described in Section 7(b); namely, (1) to employ such personnel as may be necessary for the Council to perform its duties and functions under this Act, but not to exceed twelve compensated employees; (2) to obtain the services of experts and consultants in accordance with the provisions of Section 3109 of title 5, United States Code; and (3) to develop such rules and regulations as are necessary to carry out the purposes of this Act. Section 7(c) allows for the possibility notwithstanding Section 367(b) of the Revised Statutes (31 U.S.C. 665(b)), that the Council may utilize voluntary and uncompensated labor and services in carrying out its duties and functions.

G. RESPONSIBILITIES AND DUTIES OF THE DIRECTOR

The Director shall assist and advise the Council on policies and programs of the Federal Government affecting critical materials by the following means, identified in Section 8(a):

(1) providing for professional and administrative staff and support for the Council;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, including research and development, which affect critical materials availability and needs;

(3) cataloging, as fully as possible, research and development activities of the Government, private industry, and public and private institutions;

(4) monitoring and evaluating the critical materials needs of basic industry and the Government, including the critical materials research and development needs of the private and public sectors;

(5) initiating Government and private studies and analyses, including those to be conducted by or under the auspices of the Council, designed to advance knowledge of critical materials issues and develop alternatives, including research and development, to resolve national critical materials problems;

(6) issuing a biennial report providing a domestic inventory of critical resources with projections on the prospective needs of government and industry for these resources, including a long-range assessment, prepared in conjunction with the Office of Science and Technology Policy in accordance with the National Materials and Minerals Policy, Research and Development Act of 1980 and in conjunction with such other Government departments or agencies as may be considered necessary, of the prospective major critical materials problems which the United States is likely to confront in the immediate years ahead and providing advice as to how these problems may best be addressed; and

(7) recommending to the Congress such changes in the current policies, activities, and regulations of the Federal Government, and such legislation, as may be considered necessary to carry out the intent of this Act and the "National Materials and Minerals Policy, Research and Development Act of 1980".

Section 8(b) allows that the Director, in exercising his responsibilities and duties under this Act, (1) may consult with representatives of science, industry, labor, State and local governments, and other groups; and (2) shall utilize to the fullest extent possible the services, facilities, and information (including statistical information) of public and private agencies, organizations, and individuals.

H. AUTHORITY

Section 9 authorizes the Council:

(1) to prescribe such rules and regulations as may be necessary for its operation;

(2) to enter into contracts and acquire property necessary for its operation to such extent or in such amounts as are provided for in appropriation Acts;

(3) to publish or arrange critical materials information that it deems to be useful to the public and private industry to the extent that such publication is consistent with the national defense and economic interest;

(4) to request available information from private and public sources which it considers necessary in the discharge of its duties if—

(A) in the case of a request for information from a private source, the furnishing of such information will not create an undue burden or hardship on such sources; or

(B) in the case of a request for information for a public source, the furnishing of such information is permitted by law; and

(5) to exercise such authorities as may be necessary and incidental to carrying out its responsibilities and duties under the Act.

I. AUTHORIZATION OF APPROPRIATIONS

Section 10 authorizes appropriations to carry out the provisions of the Act in the sum of up to $1,000,000 for the first fiscal year and such sums as may be necesary thereafter.

J. DEFINITION

Section 11. As used in this Act, the term "materials" has the meaning given it by section 2(b) of the National Materials and Minerals Policy, Research and Development Act of 1980.

VIII. Legislative History of the Bill

H.R. 4281, Critical Materials Act of 1981, was introduced by Mr. Fuqua for himself and Mr. Glickman, Mr. Walgren, Mr. Brown of California, Mr. Santini, Mr. Roe, Mrs. Bouquard, Mr. Flippo, Mr. Young of Missouri, Mr. McCurdy, Mr. Dymally, Mr. Bedell, Mr. Bennett, Mr. Breaux, Mr. Daniel, Mr. Rahall, Mr. Hollenbeck, Mr. Forsythe, Mr. Ritter, Mr. Young of Alaska, Mr. Lujan, Mr. Bevill, Mr. Rudd, Mr. Skeen, and Mr. Lehman, on July 27, 1981. The bill was referred to the Committee on Science and Technology and subsequently to the Subcommittee on Transportation, Aviation and Materials.

Testimony associated with the implementation of P.L. 96–479, "The National Materials and Minerals Policy, Research and Development Act of 1980", was heard before the Committee on Science and Technology on July 28, 1981. The purpose of this hearing was to review the progress of the Executive Branch in preparing the response called for in P.L. 96–479 as well as to consider related legislation, H.R. 4281 in particular, which was introduced prior to the hearings. Oversight hearings on P.L. 96–479 and H.R. 4281 were held on April 20 and 22, 1982, before the Subcommittee on Transportation, Aviation and Materials and the Subcommittee on Science, Research and Technology. Witnesses from the President's Office of Science and Technology Policy, the Departments of Commerce, Defense and the Interior, and the Office of Technology Assessment. Representatives of national materials professional societies and industry were also heard during these sessions.

On July 29, 1982 the Subcommittee on Transportation, Aviation and Materials met for the purpose of marking up the bill. The bill, as

amended, was passed by voice vote and ordered reported to the full Committee for further action.

On August 11, 1982, the Committee met for the purpose of marking up the bill. After further amendment, the bill was ordered reported as amended by a roll call vote of 37 yeas and 1 nay.

The following is a list of witnesses who testified at the above hearings:

July 28, 1981:

Dr. William O. Baker, Chairman of the Board (retired) Bell Laboratories.
Dr. Simon D. Strauss, consultant to ASARCO, Inc., and Chairman of the Minerals Availability Commission, American Mining Congress.
Mr. Joseph R. Wright, Deputy Secretary of Commerce, Department of Commerce.
Mr. William P. Pendley, Deputy Assistant Secretary for Energy and Minerals, Department of the Interior.
Mr. Robert Trimble, Acting Deputy Undersecretary for Research and Engineering, Department of Defense.
Mr. John M. Marcum, Assistant for Energy and Natural Resources, Office of Science and Technology Policy.

April 20, 1982:

Mr. John M. Marcum, Assistant for Energy and Natural Resources, Office of Science and Technology Policy.
Mr. Robert D. Wilson, Director, Office of Strategic Resources, Department of Commerce.
Mr. Richard Donnelly, Director of Industrial Resources, Office of the Deputy Undersecretary for Research and Engineering, Department of Defense.
Mr. William P. Pendley, Deputy Assistant Secretary for Energy and Minerals, Department of the Interior.
Mr. Stanley V. Margolin, Immediate Past President, Federation of Materials Societies.
Ms. Hope M. Babcock, Deputy Counsel, National Audubon Society.

April 22, 1982:

Dr. Joel S. Hirschorn, Project Director, Office of Technology Assessment.
Mr. Richard C. Mulready, Vice President, Technology, Pratt and Whitney Group, United Technologies.
Mr. E. F. Andrews, Vice President, Materials and Services, Allegheny International.
Dr. George Lubin, representing The Society of the Plastics Industry.
Dr. James I. Mueller, President, American Ceramics Society.

IX. Cost and Budget Data

The bill authorizes to be appropriated up to $1,000,000 to carry out the provisions of the Act for the fiscal year ending September 30, 1984, and such sums as may be necessary thereafter.

X. Effect of Legislation on Inflation

In accordance with Clause 2(1)(4), Rule XI of the Rules of the House of Representatives, this legislation is assessed to have no inflationary effect on prices and costs in the operation of the national economy.

XI. Congressional Budget Act Information

The bill provides for new authorization rather than new budget authority and consequently the provisions of section 308(a) of the Congressional Budget Act are not applicable.

Under a separate section of this report, a five-year current programs estimate is provided in response to the requirement of section 403 of the Congressional Budget Act of 1974.

XII. Congressional Budget Office Cost Estimates

The Committee has received the following communication regarding the cost of H.R. 4281 from the Director of the Congressional Budget Office:

U.S. Congress,
Congressional Budget Office,
Washington, D.C., August 11, 1982.

Hon. Don Fuqua,
Chairman, Committee on Science and Technology,
U.S. House of Representatives,
Rayburn House Office Building, Washington, D.C.

Dear Mr. Chairman: Pursuant to Section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has prepared the attached cost estimate for H.R. 4281, the Critical Materials Act of 1982.

Should the Committee so desire, we would be pleased to provide further details on this estimate.

Sincerely,

Alice M. Rivlin, *Director.*

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

1. Bill number: H.R. 4281.
2. Bill title: Critical Materials Act of 1982.
3. Bill status: As ordered reported by the House Committee on Science and Technology, August 11, 1982.
4. Bill purpose: The bill establishes a three-member council on critical materials under the Executive Office of the President to coordinate and implement critical materials policies, including research and development, among the various federal agencies and departments, and to ensure adequate and continuing consultation with the private sector concerning critical materials, material research and development, federal materials policies and related matters. The council will appoint an executive director to assist the council. The director will be assisted by a staff of up to 12 persons and may obtain the services of experts and consultants.

5. Cost estimate:

	Millions
Estimated authorization level:	
Fiscal year:	
1983	----
1984	$1.0
1985	1.1
1986	1.1
1987	1.2
Estimated outlays:	
Fiscal year:	
1983	----
1984	0.9
1985	1.0
1986	1.1
1987	1.2

The costs of this bill fall within budget function 800.

6. Basis of estimate: For the purpose of this estimate, it is assumed that this bill will be enacted in fiscal year 1982, and that the full amounts authorized will be appropriated prior to the start of each fiscal year.

The bill authorizes up to $1 million for fiscal year 1984 and such sums as necessary thereafter. The 1985–87 costs shown above reflect the 1984 authorization adjusted for inflation. Based on historical experience of similar councils, it has been estimated that 90 percent of each year's appropriation would be spent in the first year with the remainder spent in the following year.

7. Estimate comparison: None.

8. Previous CBO estimate: None.

9. Estimate prepared by: Walter Raheb.

10. Estimate approved by:

C. G. Nuckols

(For James L. Blum, Assistant Director for Budget Analysis).

XIII. Oversight Findings and Recommendations, Committee on Government Operations

Pursuant to Clause 2(b)(2), Rule X, and Clause 2(1)(3), Rule XI of the Rules of the House of Representatives, no findings or recommendations have been submitted by the Committee on Government Operations for inclusion in this report.

XIV. Oversight Findings and Recommendations

Pursuant to Clause (1)(3), Rule XI of the Rules of the House of Representatives, under the authority of Clause 2(b)(1) and Clause 3(f), Rule X, the Committee's oversight findings and conclusions are reflected in the recommendations found in the present bill and report.

XV. Changes in Existing Law Made by the Bill, as Reported

In compliance with Clause 3 of Rule XIII of the Rules of the House of Representatives, it is hereby stated that no changes to existing law result from H.R. 4281.

XVI. Committee Recommendation

A quorum being present, the Committee ordered H.R. 4281 favorably reported as amended by a roll call vote of 37 ayes and 1 nay on August 11, 1982.

XVII. ADDITIONAL VIEWS OF CONGRESSMAN JIM DUNN

There is no question that the problem that this bill attempts to solve is a serious one. Our increasing dependence on imports for many of our critical and strategic materials needs, and the lack of a comprehensive, coherent policy for dealing with this disturbing trend concerns me very much. However, I have serious reservations about creating a new agency everytime a problem arises.

There are presently over 600 agencies in the federal government, and it is becoming increasingly difficult to contain the cost of the government. The administration has proposed coordinating materials policy through the Cabinet Council on Natural Resources and Environment. I believe that with proper direction this can be made to work.

My concern with this bill is strictly in regard to the creation of another federal agency; I want to be assured that everything possible has been done to resolve the materials issue within the existing governmental organization before creating a new agency. I do not believe it has.

JIM DUNN.

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